REMARKS/ARGUMENTS

Reconsideration and allowance of this application are respectfully requested. Currently, claims 1-20 are pending in this application.

Allowable Subject Matter:

Claims 3-4, 9 and 15-16 are allowable.

Rejection Under 35 U.S.C. §112

Claims 1-2, 5-8, 10-14 and 17-20 were rejected under 35 U.S.C. §112 as allegedly being indefinite. The Office Action apparently holds that Applicant's prior claim amendments changing terminology "geometry" to "geometric figure" render the above-noted claims indefinite. The present claim amendments thus reverts back to originally terminology "geometry." Applicant thus request that the rejection of claims 1-2, 5-8, 10-14 and 17-20 under 35 U.S.C. §112 be withdrawn.

Rejections Under 35 U.S.C. §102 and §103:

Claims 1-2, 5-8, 10, 13-14 and 17-20 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Crofts et al (U.S. '533, hereinafter "Crofts"). Claims 11-12 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Crofts. Applicant respectfully traverses these rejections.

For a reference to anticipate a claim, each element must be found, either expressly or under principles of inherency, in the reference. Each element of the claimed invention is not found in Crofts. For example, the limitation "determining drive signal generation timing and drive signal termination timing of the injector

from the geometry of the injection rate having an area corresponding to the request injection quantity," as required by independent claim 1 is not found in Crofts. Similarly, Crofts fails to disclose or even suggest "determining a drive signal generation timing and a drive signal termination timing of the injector from the geometry of the injection rate having an area corresponding to the request injection quantity," as required by independent claim 13 and its dependents.

The Office Action makes reference to paragraphs [0036], [0038] and Fig. 4 of Crofts. Applicant submits that none of these specifically identified portions (nor any other portion) of Crofts discloses or even suggests the above-noted limitations required by independent claims 1 and 13.

In Crofts, a fuel pressure in control volume 50 is transmitted to piezoelectric actuator 62 causing compression of piezoelectric actuator 62. The piezoelectric actuator 62 generates a voltage according to the pressure in control volume 50. (See page 4, lines 3-5 of the left side of paragraph [0036]). This signal is used as a valve element lift feedback signal to control the injection timing, fuel metering and/or injection rate shape. (See page 4, lines 6-11 of the left side of paragraph [0036]). Fig. 4 of Crofts graphically illustrates these control operations. However, Crofts fails to disclose a geometric figure of an injection rate on which a drive signal generation timing and a drive signal termination timing of an injector is determined.

While paragraphs [0036] and [0038] of Croft disclose a feedback signal to control injection rate shape, claims 1 and 13 further require determining a drive signal generation timing and a drive signal termination timing *from the geometry of the injection rate*. Merely controlling the injection rate shape as disclosed in Croft does not teach or suggest subsequently determining parameters, such as a drive signal generation timing (drive pulse ON timing) and a drive signal termination timing (drive pulse OFF timing), from the injection rate shape.

The paragraph bridging pages 3-4 of the Office Action states, *inter alia,* "Claim 2 states that the lift sensor of this claimed device is used to at least approximate the fuel injection rate. This is also true in Crofts...." Claim 2 requires a particular way (i.e., determining and converting the geometry of a needle lift quantity) to determine the geometry of the injection rate required by base independent claim 1. As required by claim 1, the determined geometry of the injection rate is then used to determine the drive signal generation timing and a drive signal termination timing of the injector. Even assuming *arguendo* that Crofts provides a teaching or suggestion of an initial step of determining a geometry of the injection rate in the manner required by claim 2, this would still not mean that Crofts *further* teaches or suggests determining drive signal generation timing and a drive signal termination timing of the injector from this determined geometry as required by claim 1.

Accordingly, Applicant respectfully requests that the rejections under 35 U.S.C. §102 and §103 be withdrawn.

Conclusion:

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
Raymond Y. Mah
Reg. No. 41,426

RYM:dmw
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4044
Facsimile: (703) 816-4100